

Unit ID: 1406

Domain

HYDROMETALLURGICAL PROCESSING

Title:

Operate fluid mixing equipment

Level: 3

Credits: 6

Purpose

This unit standard is intended for those who carry out metallurgical processing operations. People holding credit for this unit standard are able to: Plan and prepare for operating fluid mixing equipment; demonstrate knowledge relating to the operation of fluid mixing equipment; operate fluid mixing equipment; and complete the duties pertaining to the operation of fluid mixing equipment.

Special Notes

1. Entry information:

Prerequisite

- 1449 - *Comply with health, safety and environmental rules and regulations pertaining to processing operations*; or demonstrated equivalent knowledge and skills.

2. Assessment evidence may be collected from a real workplace or a simulated workplace in which hydrometallurgy operations are carried out.

3. Safe working practices include day-to-day observation of safety policies and procedures and compliance with emergency procedures.

4. Fluid mixing processes can vary from continuous mixing processes as typically found in oil plants to batch mixing as commonly used in chemical plants and paint manufacture. It covers the mixing of two or more materials to make a product.

5. Specifications refer to any, or all of the following: manufacturer's specifications and recommendations, and workplace specific requirements.

6. Performance of all elements in this unit standard must comply with relevant regulatory, legislative, workplace requirements and/or manufacturers' specifications.

7. Regulations and legislation, including subsequent amendments, relevant to this unit standard may include but are not limited to the following:

- Labour Act, No. 11, 2007
- Mineral Act, No. 33, 1992
- Mine Health and Safety Regulations, 1999
- Regulations relating to the Health and Safety of employees at work, 1997 and all industry specific regulations, legislations, code of practice, or code of conduct.

Quality Assurance Requirements

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority and the Namibia Training Authority. All approved unit standards, qualifications and national assessment arrangements are available on the Namibia Training Authority website www.nta.com.na.

Elements and Performance Criteria

Element 1: Plan and prepare for operating fluid mixing equipment

Performance Criteria

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, explained, clarified and applied to the allocated task.
- 1.2 Safety and security requirements, including personal protective clothing and equipment are obtained from the site safety plan, workplace policies and procedures, explained, and applied to the allocated task.
- 1.3 Equipment, tools, accessories selected to carry out tasks are checked for consistency with the requirements of the job, their usability and any faults rectified or reported prior to commencement of work.
- 1.4 Environmental protection requirements are identified from the project environmental management plan and applied to the allocated task.
- 1.5 Work area is inspected and prepared according to workplace procedures.

Element 2: Demonstrate knowledge relating to the operation of fluid mixing equipment

Range

Typical problems may include but are not limited to mixing time; power consumption; uniformity; vortexing; and aeration.

Corrective or remedial actions may include but are not limited to position and angle of baffles where appropriate, impellor (angle, size, shape or speed) and feed rate of fluids.

Performance Criteria

- 2.1 The actions and conditions pertaining to a safe, healthy work environment when operating fluid mixing equipment are described.
- 2.2 Applications for the mixer type are identified according to manufacturer's specifications.
- 2.3 Typical problems, hazards and associated risks pertaining to the operation of fluid mixing equipment are identified through relevant risk assessment procedures.
- 2.4 Corrective actions, in case of sub-standards conditions and problems encountered, are described.

Element 3: Operate fluid mixing equipment

Range

Equipment may include but are not limited to mixers for low, medium and high viscosity fluids, jet mixing, top and side entry mixers and propeller, and pitched and square bladed turbine impellers.

Mixing conditions may be adjusted by baffles; mixer speed; mixing duration; and other means.

Performance Criteria

- 3.1 Workplace hazards and associated risks are identified, minimised or eliminated according to workplace procedures and legislative requirements.
- 3.2 Materials are charged and start-up procedure is carried out according to workplace procedures.
- 3.3 Mixing conditions are adjusted as per specifications.
- 3.4 If necessary, corrective and reporting actions are taken according to workplace procedures.

Element 4: Complete duties pertaining to the operation of fluid mixing equipment

Range

Housekeeping may include but is not limited to ensure the work area is ready for next user; remove work materials to designated locations; correctly identify waste and re-usable material; and remove waste and re-usable materials to designated locations.

Performance Criteria

- 4.1 The plant is stopped according to workplace procedures.

- 4.2 Task-specific tools, personal protective and safety equipment, are cleaned, maintained and stored for further use according to workplace procedures.
- 4.3 Good housekeeping practices are maintained according to workplace procedures.
- 4.4 Reporting and recording requirements are met according to workplace procedures.
- 4.5 Work related documents are completed according to job requirements and workplace procedures.

Registration Data

Subfield:	Metallurgy
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